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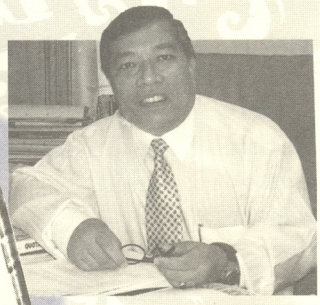
UNIMAS RESEARCH UPDATE

# TWO NEW RESEARCH CHAIRS FOR UNIMAS



Recently it has been a period of great tribute and gratitude for us at Unimas; that of honour and recognition. The Institute of East Asian Studies received two new research chairs of RM2 million each to rev up research efforts in ethnic studies of Sarawak, specifically on two important ethnic communities of Sarawak , the Dayaks and the coastal communities including the Melanau and Sarawak Malays

***Chair of Dayak Studies:*** The Dayak Cultural Foundation has endowed the Chair of Dayak Studies to ensure that there will be continuing and long term research focusing on issues confronting the Dayak communities that constitute a critical component of the population of Sarawak in particular, and the island of Kalimantan/Borneo as a whole. As a University committed to furthering research and scholarship, UNIMAS will contribute the expertise of its scholars and international linkages to enhance study of contemporary Dayak societies. The Institute of East Asian Studies at UNIMAS, the first of its kind to be set up in ASEAN, has a particular concern to develop the study of Sarawak and Borneo.

Although various aspects of traditional Dayak societies have been investigated, there are a number of aspects facing contemporary Dayak societies that warrant close examination. These include issues on (i) employment creation and income distribution, particularly for those residing in the rural areas; (ii) the role and identity of the Dayak peoples, as they enter the 21st century; and (iii) relations between the various Dayak peoples, with the coastal and urban groups, and with new settlers from other regions.

***Nusantara Chair:*** Hardwood and Big Wood have generously endowed a research chair called the Nusantara Chair to fund a range of research activities on the coastal communities of Sarawak. The coastal communities have exercised a prime leadership role throughout much of the history of Sarawak, both prior to and since forming Malaysia. However, relatively little research has been published on these communities, their composition and their role in the broader society. Even that which are available needs to be carefully re-evaluated. In the comparative studies of "the Malay World", Sarawak and Borneo have rarely received more than a passing mention. There have been few endeavours undertaken on a comparative basis by scholars with a detailed understanding of both Indonesia and Malaysia. Through this Nusantara Chair, a range of contemporary issues facing the Malay and Melanau communities will be studied which include; (i) the revitalization of coastal communities, fully utilizing the human potential and available economic resources; (ii) recent developments and the multi-faceted roles of political parties amongst the coastal peoples and (iii) issues of evolving identity, within the context of Sarawak, Malaysia and the Nusantara.

There are many aspects of contemporary society that will benefit from objective scholarly inquiry to be initiated through the establishment of the above two research chairs. The challenge of the 21st century requires educated citizens who have a full understanding in a global and comparative perspectives. Thus, making the people of Sarawak not only more prosperous but also fulfilled culturally and spiritually.

***"There are many aspects of contemporary society that will benefit from objective scholarly inquiry to be initiated through the establishment of the above two research chairs."***



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## IRDC CANADA FUNDS RESEARCH ON INTERNET ACCESS FOR REMOTE COMMUNITES IN SARAWAK

Unimas researchers led by Dr Roger Harris of the Faculty of Information Technology received an allocation of RM200,000 from the Pan Asia R&D Grants Programme of the Canadian government's International Development Research Centre (IDRC) for a two-year project on wiring rural communities of Sarawak. The project seeks to demonstrate the potential for sustainable human development in rural and remote communities in Sarawak from their use of the Internet. It seeks to dispel the myth that computers are artifacts only of urban life by making information and communications technology capability available to those rural populations that are currently excluded from the benefits of the revolution in information distribution. As information is increasingly being recognized as a potent force in the shaping of all our lives, the project intends to establish practical means for empowering communities that normally sit on the margins of advances in computing and telecommunications. These communities are deprived of the information which urban dwellers take for granted. The more remote the community, the greater the relative advantage they enjoy from improved communications and information flows. In Sarawak's case, around half the population resides outside the urban areas, and it is essential to find effective means for allowing them to participate in the wired society that is implied by the nation's aspiration for fully developed status.

*"The project intends to establish practical means for empowering communities that normally sit on the margins of advances in computing and telecommunications."*

The research is multi-disciplinary in nature, involving a team of eight UNIMAS academic staff from four faculties, plus students. The approach is to work initially with rural schools by introducing IT literacy, including the Internet, followed by increased use of IT for teaching and learning, using the government's Smart School programme as a guide for implementation. This will be followed by establishing telecentres that will deliver computing capability, including the Internet, to the rest of the community. The telecentre will offer opportunities for local entrepreneurship and will offer a range of computing and communication services. In order to ensure the delivery of useful information to rural communities, the team will also address their informational needs and the means for satisfying them. In view of the range of geographies, local economies and cultures in Sarawak, the project will work in several different locations in order to ensure that successes can be replicated.

## CLASSICAL MATHEMATICAL FORMULA FINDS NEW PRACTICAL APPLICATIONS AT UNIMAS

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A husband and wife team at the Faculty of Information Technology, Unimas has been making significant waves worldwide in the realm of applied mathematics, specifically in CVBEM research. Advances made here at Unimas in CVBEM, short for "complex variable boundary element method" has generated a great deal of interest from researchers abroad. Ang had been invited by the Iranian Mathematical Society to present a talk on the CVBEM during its 29th annual conference in 1998. Early in 1999, he was invited to present a seminar on CVBEM in the Department of Mathematics at Kyunghee University, Republic of Korea. More recently, he was requested to contribute an article on the subject in a special issue of the Journal of the Chinese Institute of Engineers in Taiwan. Some of the CVBEM projects were carried out in collaboration with overseas researchers. International collaborators include D. L. Clements and T. Cooke, both from the University of Adelaide in Australia, and M. Dehghan from the Amirkabir University of Technology in Iran.

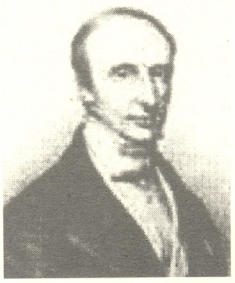
CVBEM refers to a class of computer methods based on the famous Cauchy integral formula by A. L. Cauchy

When the French mathematician Augustin Louis Cauchy (1789-1857) wrote down the classical formula, most likely he did not foresee that some 200 years later it would be turned into a sophisticated computer algorithm for solving important problems in the applied sciences and engineering.

T. V. Hromadka II, currently a professor in mathematics at the California State University, was one of the pioneering researchers in CVBEM. In the mid-1980s, he applied the Cauchy integral formula with n = 0 to derive a CVBEM for solving the two-dimensional Laplace equation, an elliptic partial differential equation which appears in the formulation of many physical problems.

Recently, Unimas researchers W. T. Ang and his wife Y. S. Park proposed a different version of the CVBEM for solving a system of elliptic partial differential equations more general than the Laplace equation (refer to the list of publications below). Their

***"CVBEM has been successfully applied to study the effect of temperature on the mechanical deformation of an anisotropic solid [2], to analyze the stress distribution around holes [3] and cracks [4] and to examine the effect of material inhomogeneity on the crack tip stress intensity factors."***



$$\frac{2\pi i f^{(n)}(a)}{n!} = \oint_C \frac{f(z)dz}{(z-a)^{n+1}} \quad \text{for } n = 0, 1, 2, \Lambda.$$

approach made use of the Cauchy integral formula with n = 0 and n = 1. It differs from the CVBEM of Hromadka in the treatment of the boundary conditions of the physical problem under consideration. It can be easily and efficiently implemented on a desktop computer.

From a practical standpoint, the CVBEM of Ang and Park can be employed to analyze a wide range of problems involving anisotropic media. It has been successfully applied to study the effect of temperature on the mechanical deformation of an anisotropic solid, to analyze the stress distribution around holes and cracks and to examine the effect of material inhomogeneity on the crack tip stress intensity factors.

A project sponsored by a research grant from UNIMAS is currently being carried out to extend the CVBEM to solve elliptic partial differential equations with variable coefficients. Its success will allow the CVBEM to be used as an analytical tool for studying an even wider range of physical problems.

**References:**

W. T. Ang and Y. S. Park, CVBEM for a system of second-order elliptic partial differential equations, *Engineering Analysis with Boundary Elements* 21 (1998) 179-184.

W. T. Ang, D. L. Clements and T. Cooke, A complex variable boundary element method for a class of boundary value problems in anisotropic thermoelasticity, *International Journal of Computer Mathematics* 70 (1999) 571-586.

W. T. Ang and Y. S. Park, A complex variable boundary element method for an exterior boundary value problem governed by an elliptic partial differential equation, *SEA Bulletin of Mathematics* 23 (1999).

W. T. Ang, D. L. Clements and M. Dehghan, CVBEM for a class of linear crack problems, *Mathematics and Mechanics of Solids* 5 (2000).

W. T. Ang, A complex variable boundary element method for antiplane stress analysis around a crack in some nonhomogeneous bodies, *Journal of the Chinese Institute of Engineers (A Special Issue on Recent Advances in Boundary Element Methods)* (1999).

RESEARCH UPDATE

# POSSIBLE THERAPEUTIC TARGET FOR PNEUMOCYSTIS INFECTION IN AIDS PATIENTS

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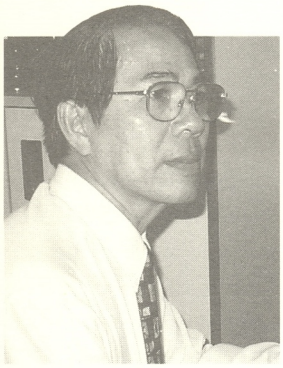
*Pneumocystis carinii* pneumonia remains among the most prevalent opportunistic infections among AIDS patients. Currently, drugs used clinically for treatment of systemic fungal infections and deep mycosis act by binding to the sterols found on the fungal membrane or disrupting their biosynthesis. Polyene antibiotics such as amphotericin B for instance bind avidly to ergosterol in fungal cell membranes which represents an excellent target for chemotherapeutic attack against pathogenic fungi. Although classified as a fungus, *P. carinii* lacks ergosterol. Investigators have failed to detect ergosterol in *P. carinii* isolated and purified from the lungs of immunosuppressed rats. In this respect, the pathogen appears to be unlike higher fungi. Parasites generally scavenge sterols (e.g., cholesterol) from the host and utilize them for membrane formation and other cell functions. Instead, *P. carinii* synthesizes its own distinct sterols (e.g., fungisterol) despite the abundance of cholesterol in the patient's lung alveolus. Such pathogen-specific sterols appear vital for the organism's survival and proliferation in the host and also presents a problem in the chemotherapeutic treatment of *P. carinii* infection in AIDS patients with the inefficacy of conventional ergosterol-target antibiotics. Dr Zunika Amit of Unimas with a team of investigators from the US recently reported the occurrence of a rare sterol Delta7, 24-alkylsterol called pneumocysterol in *P. carinii* hominis; a finding that may well have far-reaching implications in our search for a more effective means of treating infections caused by this organism. The presence in high concentrations of pneumocysterol together with several other 24-alkylsterols in human-derived *P. carinii hominis* suggests that the enzyme sterol C-24 methyltransferase activities are extraordinarily high in this organism. Results further suggest that 24-alkylsterols are important components of the pathogen's membranes. The inefficacy of azole drugs against *P. carinii* thus can be explained by the ability of this organism to form 24-alkylsterols before demethylation of the lanosterol nucleus. Because mammals cannot form 24-alkylsterols, their biosyntheses in *P. carinii* are attractive targets for the development of chemotherapeutic strategies against this opportunistic infection.

***"Because mammals cannot form 24-alkylsterols, their biosyntheses in P. carinii are attractive targets for the development of chemotherapeutic strategies against this opportunistic infection."***

**Reference:**

Kaneshiro ES, Amit Z, Swonger MM, Kreishman GP, Brooks EE, Kreishman M, Jayasimhulu K, Parish EJ, Sun H, Kizito SA, Beach DH. Pneumocysterol [(24Z) ñ ethylidenelanost-8-en-3beta-ol], a rare sterol detected in the opportunistic pathogen *Pneumocystis carinii hominis:* structural identity and chemical synthesis. *Proc Natl Acad Sci U.S.A.* 1999 Jan 5;96(1): 97-102.

## *WORM LOADS HIGH AMONG RURAL SCHOOLCHILDREN IN SERIAN DISTRICT, SARAWAK*



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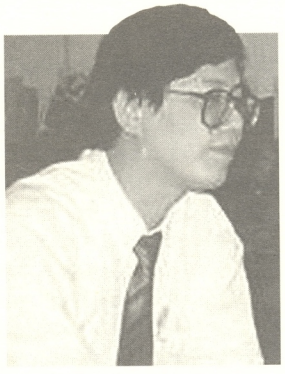
***"Generally this study recorded similar distribution pattern of Trichuris infection as observed by others who showed that most infected individuals have low worm loads while a few individuals have disproportionately large worm burdens."***

At least one-quarter of the world's population is chronically infected with parasites of the gastrointestinal tract and most of these infected people live in developing countries. It is well known that even moderate infections with certain parasitic worms can affect the growth, bone formation and weight gain of children. Children treated with antihelminthics against hookworms *Ascaris lumbricoidis and Trichuris trichuria* have been found to show significant improvement in physical growth and also in their cognitive ability, suggesting insidious consequences for the infected children. Although a number of studies have been carried out on the prevalence of intestinal helminths in school children of Peninsular Malaysia, similar studies for the State of Sarawak are scarce. In an attempt to provide some insight on the prevalence of intestinal helminths infection in Sarawak, a study was undertaken by a team of researchers from Unimas Faculty of Medicine and Health Sciences on 264 school children in the Serian District. School children from three primary and two secondary schools were examined for the presence of gastrointestinal helminths. One primary school and another secondary school were located in the Serian town and the remaining schools, located outside Serian, were considered rural schools. The intestinal helminths detected were *Ascaris lumbricoides, Tricuris trichiura, Enterobius vermicularis* and hookworm. The commonest intestinal worm was *T. trichiura* followed by *A. lumbricoides*. Single infections with Ascaris were present in 3.3%, with *Trichuris* 19.1% and with hookworm 2.1% of the children. Mixed infections were present in 33.6% of the children and were dominated by that of *Trichuris and Ascaris* (9.1%) and only 2.1% with *Trichuris*-hookworm infections. Data also revealed a certain trend of infection load occurring in the children from rural and town schools. Children from rural schools harboured higher numbers of eggs in their faeces than those from the Serian schools. Further, within the rural schools, the primary school children seemed to have higher infection loads than those in secondary schools. Generally this study recorded similar distribution pattern of *Trichuris* infection as observed by others who showed that most infected individuals have low worm loads while a few individuals have disproportionately large worm burdens. Heavily infected individuals are not only likely to suffer ill effects from the infections but they are also the major sources of infection in the community in which they live. Thus treating the most heavily infected children will reduce morbidity and transmission in the community.

**Reference:**

D L Lee, PhD, S Lee, PhD, M S Chang, PhD, A J Poan & J T Katip. Intestinal Helminth Infections Amongst School Children in the Serian District of Sarawak. *The Medical Journal of Malaysia* 54 (1) March 1999.

## *PROBE INTO FACTORS CONTRIBUTING TO COMPUTER ANXIETY AMONG UNDERGRADUATES*



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***"Results suggest two major factors are contributory to the feelings of apprehension and anxiety towards computer education: their premonitory fear and discerning attitude towards microcomputers and their previous hands-on experience in using the microcomputers."***

University students of today are expected to be not only assertive, motivated, resourceful, skilful and knowledgeable but also computer literate. Teaching and learning culture in institutions of higher learning are rapidly transforming from the more traditional mode of scheduled lectures and teacher-centered learning to one that is computer-aided and student-centered. With the use of computers in teaching and learning, students must change from being passive receivers of knowledge to proactive seekers of information. A study of undergraduates taking a course in information technology at Unimas was undertaken to contribute to our understanding on how they take on computer education as part of their generic development programme. The focus of the study was to determine whether or not perceived knowledge of software, previous use of microcomputers, general knowledge of computers, programming experience, and gender were predictors of computer anxiety. Analysis was carried out to assess the factor structure of Computer Anxiety Scale (CAS). Results suggest that two major factors are contributory to the feelings of apprehension and anxiety towards computer education: i. their premonitory fear and discerning attitude towards microcomputers and ii. their previous hands-on experience in using the microcomputers. Students who performed well academically in the information technology course were found to exhibit low computer anxiety levels and their success factors appeared to be attributable to having high perceived knowledge of mainstream software and programming experience. Gender in general was not found to be a predictor of computer anxiety. However, more males were found to belong to the category of having limited experience with microcomputers and possessing low perceived knowledge of microcomputers. Tutorials and laboratory sessions were found to be more effective than lectures in providing the necessary skills and knowledge to perform well in the course.

**Reference:**

Hong, K. S. 1998. Predictors of computer anxiety and performance in an introductory information technology course. *Journal of Science and Mathematics Education in Southeast Asia* Vol XXI, No 2.

RESEARCH UPDATE

## *EVIDENCE FOR DIRECT EFFECTS OF 1997 SMOKE-HAZE ON TROPICAL FORESTS*

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In September and early October 1997, fires in Kalimantan and Sumatra burned approximately 0.3 - 1.7 x 10 ha of forest. Unsustainable land -use exacerbated by drought conditions associated with an El Nino southern oscillation event, appears to be responsible for the fires. As a consequence of the fires, an immense cloud of smoke-haze formed over Southeast Asia and prevailing north-westerly winds carried the thick haze cloud over the urban centre of Kuching. The long-term effects of these emissions on atmospheric composition and global processes have been much discussed, however less is known of the short-term effects of fires on remaining tropical forest ecosystems. Short-term effects of forest fires include elevated trace gas, aerosol and CO2 levels, nitrogen deposition, acid precipitation, and local climatic changes, all of which may have direct negative or positive effects on plant functioning in undisturbed forests. Two Unimas scientists, Dr Stuart Davies and his graduate student Layang Unam, seized the rare opportunity provided by the smoke-haze occurrence in 1997 to investigate the short-term effects of these changes on leaf-level gas exchange for three economically important indigenous tree species *Durio zibethinu,* (commercial durian) and the timber species *Dryobalanops rappa* and *Gonystylus bancanus.*

Their study showed that although Kuching is several hundred kilometers from the nearest fires, atmospheric particulate matter, and concentrations of $SO_2$, CO and $CH_4$ were drastically elevated during the haze. Airborne particulate matter of less than 10 μm or $PM_{10}$ levels were 20 times higher than normal levels of 35-50 μg $m^3$ recorded on clear days. $SO_2$ concentrations during the haze ranged between 10-48ppb, which vastly exceeded background levels of 0.8-1.0 ppb. CO concentrations were elevated from typical levels of 0.5-1.5 ppm to levels greater than 5 ppm; even reaching a maximum of 47 ppm during the worst of the haze. Atmospheric $CH_4$ concentrations were elevated shortly after the worst of the smoke-haze where $PM_{10}$, $SO_2$ and CO peaked. Atmospheric concentrations of $O_3$ and NOx were not noticeably elevated during the haze period, although a four-fold increase in NOx was recorded on September 29.

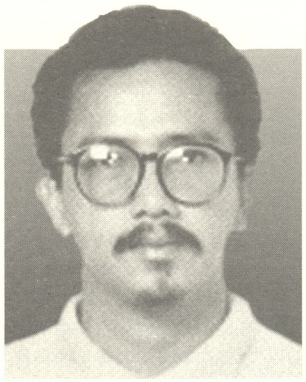
The sudden release of $CO_2$ from deforestation and biomass burning in 1997 increased $CO_2$ concentrations in Kuching by 17-28%. Photosynthetically active radiation(PAR), ambient temperature(Ta) and relative humidity(RH) were also greatly affected by the smoke haze. PAR levels were severely reduced by the haze, with levels 45-92% lower than the clear day. Such a large reduction in PAR is likely to dramatically reduce forest level fixation. This may have had a significant direct short-term effect on unburned forests. A more direct effect of the smoke-haze on photosynthesis was evident when the rates of gas exchange and $CO_2$ concentrations of three commercially important tree species were analyzed. In all three species, photosynthetic rates and stomatal conductance were negatively related to $CO_2$ concentrations. Local climatic factors were also strongly affected by the smoke-haze. Mean Ta was up to 28% lower on the hazy days. RH was substantially higher on the hazy days, 10-26% higher in the morning and 31-46% higher in the afternoon than on clear days.

***"Photosynthetically active radiation(PAR) levels were severely reduced by the haze, with levels 45-92% lower than the clear day. Such a large reduction in PAR is likely to dramatically reduce forest level fixation. This may have had a significant direct short-term effect on unburned forests."***

**Reference:**

Stuart J. Davies & Layang Unam. Smoke-haze from the 1997 Indonesian forest fires: effects on pollution levels, local climate, atmospheric CO≤ concentrations, and tree photosynthesis. *Forest Ecology and Management* 4748 (1999) 1-8.

# RARE FLYING SQUIRRELS RECORDED IN MORE AREAS IN SARAWAK



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***"This study provides new information on the ranges of some rare flying squirrels in Sarawak that may be useful in our effort to save these protected species from being pushed to the brink of extinction amidst rapid habitat destruction and hunting pressure in the State."***

Flying squirrels are protected animals in Malaysia with very limited information on their population status. The flying squirrel, Family Pteromyidae is predominantly an Indo-Malayan group with 11 genera and 37 species. In Borneo there are 14 species of flying squirrels belonging to eight genera. The genus *Petinomys* consists of seven species that are distributed in India, Sri Lanka, Myanmar, Thailand, Peninsular Malaysia, Sumatra, Borneo and Mindanao. In Borneo alone, four of these seven *Petinomys* species have been recorded; namely *Petinomys genibarbis, Petinomys setosus, Petinomys vordermanni* and *Petinomys hageni*. In an attempt to contribute to the existing knowledge on the distribution of a variety of nocturnal animals in the region, a Unimas scientist Mohamad Tajuddin Abdullah carried out a survey work in Borneo through mist netting method. Among the animals caught in the mist nets are some rare flying squirrels that have not been previously recorded in Sarawak. Two specimens of *Petinomys setosus* were collected: a male animal from a meter-wide forest trail in Samunsam Wildlife Sanctuary and the second animal was a female *Petinomys setosus* netted at Lambir. These specimens represent the first records of the species in both areas. Previous records for the species were from Myanmar; Peninsular Malaysia; Sumatra; the foothills of Mount Kinabalu , Sandakan Bay and Tawau in Sabah; Tasek Merimbun in Brunei; Baram and Kuching in Sarawak. Another rare species of flying squirrel *Petinomys vordermanni* was caught at Kubah National Park that turned out to be the first distributional record for Sarawak. Previous records for the distribution of this species were in Peninsular Malaysia, the islands of eastern Sumatra, Tasek Merimbun in Brunei and Sungai Boh in East Kalimantan. This study provides new information on the ranges of some rare flying squirrels in Sarawak that may be useful in our effort to save these protected species from being pushed to the brink of extinction amidst rapid habitat destruction and hunting pressure in the State.

**Reference:**

M.T.Abdullah and Sapuan Ahmad 1998 A Note on the New Distribution Record of Rare Flying Squirrels in Sarawak, Malaysia *Malaysia Nature Journal*, 52 : 3 & 4, 237 - 240

# ARSENIC LEVELS IN EDIBLE FRESHWATER MOLLUSCS MAY POSE HEALTH HAZARDS TO RESIDENTS ALONG SG. SARAWAK KANAN

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Considerable attention has been given to evaluating the significance of environmental pollution by heavy metals. It has long been known that heavy metals in sufficient quantities are able to cause serious damage to human health. Whether general environmental sources of heavy metals can result in the build-up to cause adverse effects on human health is however a question yet to be answered. For this reason, researchers from Unimas led by Associate Professor Dr Lau Seng embarked on a study to determine the level of heavy metal accumulation in freshwater molluscs in Sungai Sarawak Kanan. Heavy metals in the aquatic environment have been known to primarily originate from naturally occurring geochemical materials. In the case of Sg Sarawak Kanan, the level of heavy metals in the environment may have been increased by human activities such as gold mining. The high suspended solid loads in the river are capable of removing most of the soluble metals from the flowing water and trapping them in the bottom sediments of the river bed. Both Sg Sarawak Kanan and Sg Bau in Sarawak have been reported to be polluted with heavy metals in their sediments (Lau *et al.* ,1995, Lau *et al.*,1996) Molluscs have been suggested to serve as a promising biological indicator organism in our effort to monitor the pollution of the environment by heavy metals. This is because they are immensely tolerant to many pollutants and able to accumulate high levels of heavy metals without any adverse effects to their metabolism and survival in the environment. Three freshwater mollusc species were collected at the point source of heavy metal pollution located at Sungai Bau, a tributary of Sungai Sarawak Kanan, which have been receiving gold mine effluents from the surrounding areas since 1985. Heavy metal contents in the tissues and shells of three mollusc species *Brotia costula*, *Melanoides tuberculata* and *Clithon sp* were analysed. *B. costla* and *M. tuberculata* are strictly freshwater species while the *Clithon sp* is able to live in both fresh and brackish water environments. The *B. costula* and the *Clithon sp.* are the edible species commonly collected and sold in the local food markets. Accumulation of As, Cu, Fe,Se and Zn in all the three mollusc species were determined. All the mollusc specimens collected from the study sites were found to be heavily contaminated with As and the levels of Cu and Zn were at the maximum allowable concentrations for seafood as stipulated by the Food Act 1983. The levels of Cd, Hg and Pb however were low in the tissues of the molluscs analysed. Results indicate that the levels of As in the tissues of both *B. costula* and the *Clithon sp* were much higher than the permissible levels for human consumption. The three mollusc species also demonstrated different preferences for the bioaccumulation of heavy metals studied. Both *B. costula* and *M. tuberculata* feed on algae and diatoms which are primary producers and known to be efficient accumulators of heavy metals from enriched sediments. Having such feeding habits makes these two mollusc species very suitable as heavy metal pollutant bioindicator organisms. Although *Clithon sp* are poor bioaccumulators of heavy metals, they are usually found in abundance and easily sampled which makes this species too a useful choice as an environmental biomonitor organism.

***"All the mollusc specimens collected from the study sites were found to be heavily contaminated with As and the levels of Cu and Zn were at the maximum allowable concentrations for seafood as stipulated by the Food Act 1983".***

**Reference:**

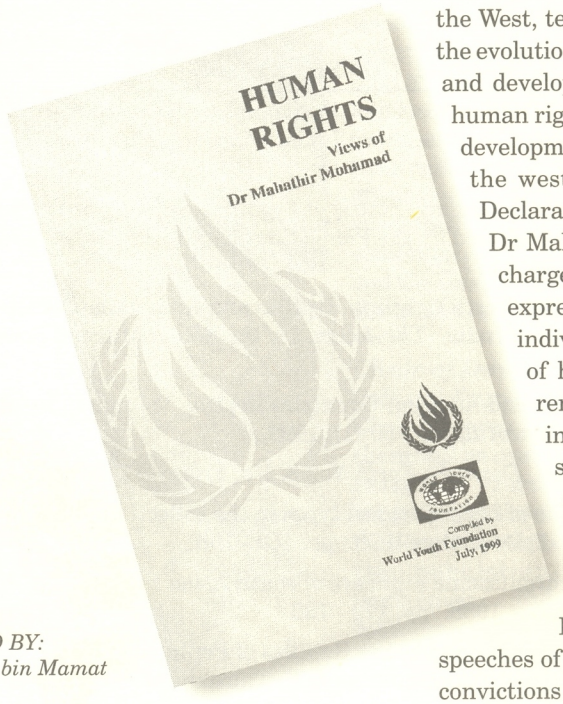
Lau S, Murtedza M, Sabtuyah S. 1995 Profile of of heavy metals in water and bottom sediments of Sg Sarawak. *Proceedings Malaysian Chemical Congress* 1995 Kuching.

Lau S, Murtedza M, and S Sabtuyah 1996 Heavy metals in sediment as a tracer for sources of pollution in Sg Sarawak. *Malaysian J Analytical Science* 2(2):365-371

Lau, S.,M Mohamed, A. Tan Chi Yen and S. Suut 1998 Accumulation of heavy metals in freshwater molluscs. *The Science of the Total Environment* 214 : 113-121

# NEW BOOKS BY UNIMAS STAFF

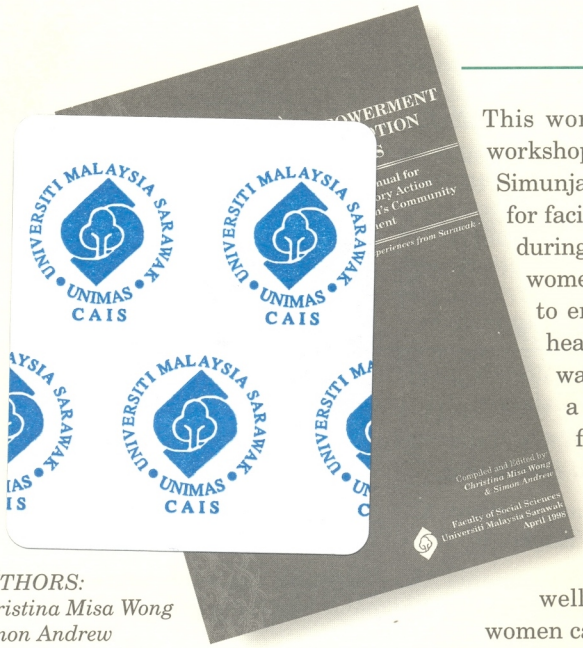
## *HUMAN RIGHTS : VIEWS OF DR MAHATHIR MOHAMAD*




*EDITED BY:*
*Ibrahim bin Mamat*

The notion of human rights, as formulated by developed countries of the West, tends to reflect the culture and practice at a given period in the evolution of a democratic society. But any society undergoes changes and development, and therefore the perception of what constitutes human rights must also change in accordance with these changes and development. Against this truism, Dr. Mahathir has often challenged the western stance of Human Rights that is enshrined in the Declaration as "universal values". Human rights, as perceived by Dr Mahathir, is neither inherently natural nor static nor free of charge. This publication is a collection of Dr Mahathir's speeches expressing his views on human rights. The West often places individual rights above and beyond the rights of society. In many of his speeches, Dr Mahathir calls for a concerted effort to remove western imperialism and to develop an Asian identity independent of western images. He expounded his desire to see the "freedom of the majority" enshrined and protected; and that individual rights should never be allowed to destabilise and undermine the lives of the silent majority of the people. During his term of duties as the Chief Executive Officer of the World Youth Federation, Dr Ibrahim Mamat of UNIMAS reviewed and edited the speeches of Dr Mahathir given at various fora to express his ideas and convictions on the controversial issue of human rights. This publication will promote a greater understanding of the fundamental disparity in opinions and concepts of human rights as perceived by people from different cultures and values.

## *COMMUNITY EMPOWERMENT IN HEALTH PROMOTION PROGRAMMES*

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This workshop manual was written as a result of a community workshop that was held at Kampung Ensika, Sebangan Sub-District, Simunjan District in Samarahan Division. It is intended as a reference for facilitators who wish to use a community participatory approach during a workshop to identify strategies in health development among women. This participatory action research (PAR) approach can serve to encourage participants to explore the meaning of health and healthy living. The manual provides ideas and suggestions on ways to identify health problems in the community and formulate a questionnaire to determine and assess the magnitude of the factors affecting health. It also guides the user to means of analysing the results and explore ways of overcoming key issues affecting health in the community. Through appropriate use of this manual, participants and trainers alike will have a better understanding of the needs of the community so that a well-thought and effective community health programme for women can be articulated to address those needs.

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